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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,677	02/28/2006	Peter John Bisiules	90959US	8431

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EXAMINER

DINH, TRINH VO

ART UNIT	PAPER NUMBER
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2821

MAIL DATE	DELIVERY MODE
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11/04/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/529,677	BISIULES ET AL.	
	Examiner	Art Unit	
	Trinh Vo Dinh	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/01/2005, 12/05/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a response to an Preliminary Amendment filed 03/29/2005. In view of the amendment, claims 21-106 have been canceled. Thus claims 1-20 are pending.

Drawing

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “dipole axis” in claim 1, “concave side” in claim 9 must be shown. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 5 is objected to because of the following informalities:

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In claim 5, "the pair of arms meet" should be changed to --the pair of arms meets-- since the pair is a singular subject not plural. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 1-20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, it is unclear what "a profile which is concave on one side and convex on the other when viewed along the dipole axis" means. Since there is no dipole axis show in the drawings, it is unclear how the pair of arms of the dipole is arranged in relation to the dipole axis.

In claim 16, it is unclear what "view in **plan** perpendicular to the central region" means.

In claim 20, it is unclear what is meant by "each pair of dipole is oriented at about +/- 45° with respect to vertical?" The examiner does not picture the orientation of the dipoles as claimed. Detailed description in Specification and/or drawings is required for understanding the claimed orientation.

Claims 2-15 and 17-19 are rejected because of their dependencies.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

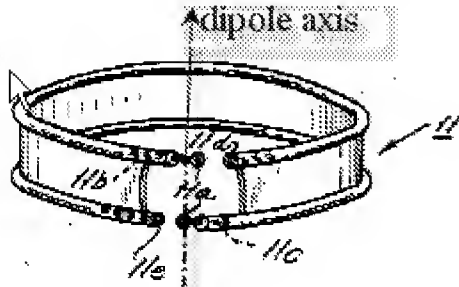
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Snow (US 4,115,778).

Respecting claim 1, Snow discloses, in Figs 2-3, a folded dipole (11) having a dipole axis and a pair of arms (inner arm 11b, outer arm 11c) which together have a profile which is concave on one side and convex on the other when viewed along the dipole axis.



Respecting claims 2-4 and 9, Snow discloses the arms are at least partially curved, the arms have curved portions which have a substantially constant radius of curvature, and the arms are at least partially curved in a plane substantially orthogonal to the dipole axis. Snow further discloses an input section (11a, 11d) coupled to a concave side of the pair of arms.

6. Claims 1-4 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Dienes (US 3,771,162).

Respecting claim 1, Dienes discloses, in Fig. 1, a folded dipole having a dipole axis and a pair of arms (10 + 12) which together have a profile which is concave on one side and convex on the other when viewed along the dipole axis.

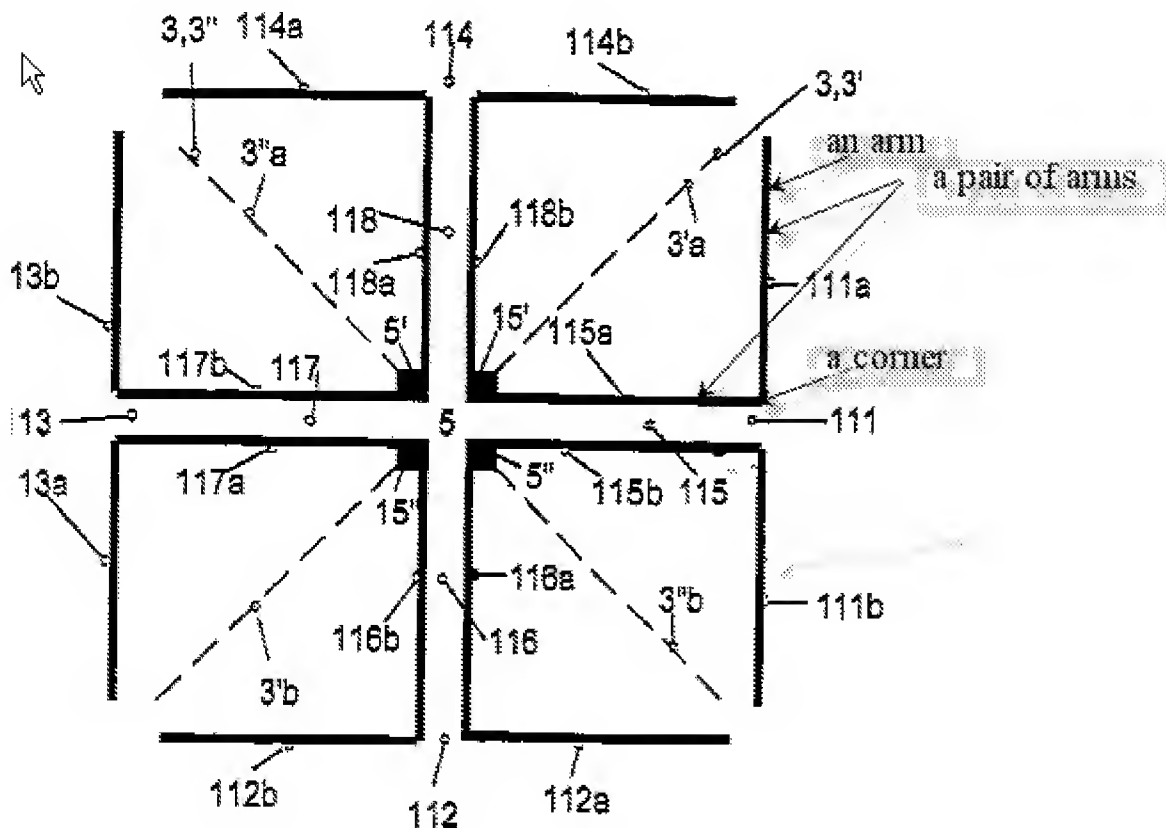
Respecting claims 2-4 and 9, Dienes discloses the arms are at least partially curved, the arms have curved portions which have a substantially constant radius of curvature, and the arms

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are at least partially curved in a plane substantially orthogonal to the dipole axis. Dienes further discloses an input section (14) coupled to a concave side of the pair of arms.

7. Claims 1, 5-7 and 9-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Gabriel et al (US 6,313,809).

Respecting claim 1, Gabriel discloses, in Figs 2 and 5, a folded dipole (111) having a dipole axis and a pair of arms (one of 111a, 111b, 112a, 112b, 113a, 113b as shown in the below drawing) which together have a profile which is concave on one side and convex on the other when viewed along the dipole axis.



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Respecting claims 5-7, 9-11, Gabriel discloses, in Figs. 2, 5, the pair of arms meets at a corner that subtends an angle lying in the range of 80° to 100° , each arm is substantially straight. Gabriel further discloses an input section (15', 5', 5'', and 15'') coupled to a concave side of the pair of arms, the pair of arms and both arms are inherently formed of sheet material and from the same sheet.

Respecting claims 14-15, the use of the antenna in a base station which is in a communication system is merely an intended use.

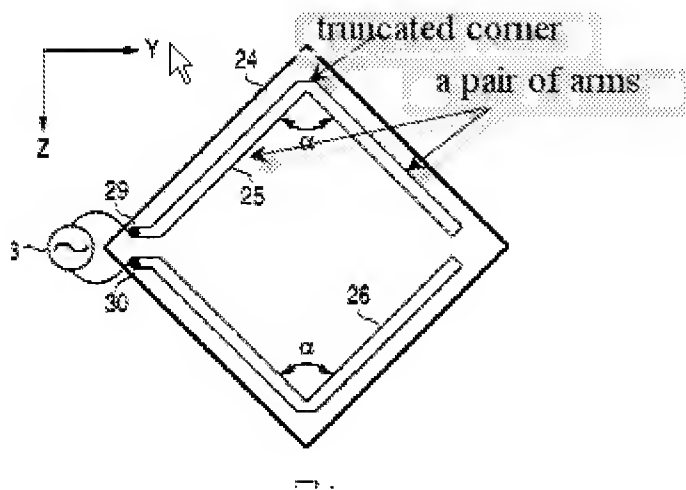
Respecting claims 16-20, Gabriel discloses, in Fig. 2, a dipole box comprising two or more folded dipoles (111a+111b, 112a+112b) arranged around a central region, each folded dipole having a dipole axis and a pair of arms (111a, 111b) which together have a profile which is concave on one side and convex on the other when viewed in plan perpendicular to the central region, each pair of arms has a curved portion with a centre of curvature which is located in the central region. Furthermore, Gabriel discloses four or more folded dipoles (111a+111b, 112a+112b, 113a+113b, 114a+114b) arranged around the central region, the dipoles are arranged as orthogonally opposed pairs, and each pair of dipoles is oriented at about $\pm 45^{\circ}$ with respect to vertical (Figs 2 or 5).

Respecting claims 12-13, Gabriel discloses, in Fig. 3, a first feed leg (15') coupled to one of the arms (111a) and a second feed leg (5'') coupled to the other arm (111b), and a ground plane (33 in Fig. 3), and a folded dipole (111 in Fig. 2) with its dipole axis directed away from the ground plane.

8. Claims 1, 5-1 and 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al (US 6,573,874).

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Respecting claim 1, Saito discloses, in Fig. 8, a folded dipole having a dipole axis and a pair of arms (as shown in the below drawing) which together have a profile which is concave on one side and convex on the other when viewed along the dipole axis.



Respecting claims 5-11, Saito discloses the pair of arms meet at a corner that subtends an angle lying in the range of 80° to 100° , each arm is substantially straight, and the corner being truncated. Saito further discloses an input section (29, 30, 33) coupled to a concave side of the pair of arms, the pair of arms and both arms are inherently formed of sheet material and from the same sheet.

Respecting claims 16-20, Saito discloses, in Fig. 9, a dipole box comprising two or more folded dipoles (35+36, 37+38) arranged around a central region, each folded dipole having a dipole axis and a pair of arms (35 and 36, or 37 and 38) which together have a profile which is concave on one side and convex on the other when viewed in plan perpendicular to the central region, each pair of arms has a curved portion with a centre of curvature which is located in the central region. Furthermore, Saito discloses four or more folded dipoles (35+36, 37+38, 39+40,

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41+42) arranged around the central region, the dipoles are arranged as orthogonally opposed pairs, and each pair of dipoles is oriented at about $\pm 45^\circ$ with respect to vertical (Fig. 9).

Inquiry

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821. The examiner can normally be reached on Monday to Friday from 9:30AM to 6:00PM. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens, can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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October 31, 2008

/Trinh Vo Dinh/

Primary Examiner, Art Unit 2821